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ABSTRACT

Alternative educational delivery systems that might be useful to community colleges are considered. The following categories of delivery systems are covered: broadcast delivery systems; copy delivery systems, print delivery systems, computer delivery systems, telephone delivery systems, and satellites. Among the applications for broadcast television are: open circuit television, instructional television fixed services, cable television, and slow-scan or compressed video. Two main categories of radio instructional applications are the primary carrier and the SCA or subcarrier. Copy delivery systems are those that deliver programs in the form of tapes, discs, or cassettes through a physical distribution system rather than being transmitted electronically. Copy delivery systems include: videocassette, videodisc, and audiocassette. The two major forms of print delivery systems available are correspondence courses and courses by newspaper. Two well-known forms of computer assisted instruction are TICCIT and PLATO, while two types of computer managed instruction are ASVP and ORACLE. Four ways in which the telephone is being used as an alternative delivery system are: teleconferencing, telelecture, telewriting, and dial access. Satellites extend the distribution and delivery of services to persons and places not otherwise served or inadequately served, and they increase the quality and number of services and programs for areas already served and at affordable cost. Among the reasons that many of these systems are not being used are cost, opposition to change, and lack of understanding on the part of county and state board members and state legislators as to what the students need and want. (SW)

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"EXPANDING ALTERNATIVE DELIVERY SYSTEMS"

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"EXPANDING ALTERNATIVE DELIVERY SYSTEMS"

It is becoming increasingly more difficult these days to read an article dealing with education without encountering terms such as "non-traditional students," "lifelong learning," "alternative delivery systems," "open learning," and "college without walls." These terms are indicative of the type of educational activities occuring in our country and around the world.

All aspects of society today are becoming oriented to education and the statistics are staggering. In 1978, 60 million people were enrolled in some type of formal education with 46 million of them outside of the school and college system.[1] In addition, we know that 4.3 million employees of big business--one of every eight--participated in courses offered by their companies.[2]

The number of "traditional" students--the 18 to 24 year old high school graduates--may be declining, but there is an increasing number of "non-traditional" students--a combination of those 18-24 year olds who are educationally disadvantaged and part-time adult learners "for whom education is a secondary rather than a primary activity."[3]

Why, then, with this increased interest in education, are community colleges and universities projecting declining enrollment? I believe the answer can be found in a reluctance on the part of some academicians to realize that the "kids" at the college aren't "kids." The majority of them are adults who bear the usual adult responsibilities of job, marriage and family and who are neither able nor desirous of participating in the "separated-from-life college activities that have provided the model for higher education in the past."[4]

As Dr. Paul Elsner, Chancellor of the Maricopa Community Colleges in Arizona recently stated,

> We are in a fiercely competitive environment, where new entrants appear daily. Community Colleges now must compete with educational programming generated by libraries, museums, proprietary schools, community schools, adult schools, university extension classes and a myriad of other agencies and institutions who see lifelong learning as their primary purpose.[5]

We can compete in this environment only if we are willing to admit that the "traditional" instructor-in-the-classroom approach to education is not the answer for every educational need. Faculty and administrators alike must come to the realization that today's students will "vote with their feet," as one Rio Salado administrator recently noted, and turn to other educational providers if the community colleges do not provide relevant education when, how and where the students desire it. This does not mean that we must sacrifice instructional quality, nor that instructional content must be watered down and spoon-fed. It simply means that as educators, we must use any and every available means to provide equal access to educational opportunities for all segments of our population.

This, then, is the reason for the discussion of "Alternative Delivery Systems." I have utilized the term "alternative" instead of "non-traditional" because I believe it better expresses the goal which we, as community college administrators, should have--providing as many alternatives and options for learning as possible. I'm speaking not only of alternatives to the traditional classroom, but alternatives to no classrooms at all, because a large portion of alternative education students would not or could not take courses without alternative delivery systems.

Let's take a brief look at each of these "alternative delivery systems" to determine how they can and do assist us in teaching our students. For convenience sake, I am going to categorize the delivery systems to be discussed into six major categories: (1) Broadcast delivery systems, (2) Copy delivery systems, (3) Print delivery systems, (4) Computer delivery systems, (5) Telephone delivery systems, and (6) Satellites.

BROADCAST DELIVERY SYSTEMS

Obviously, the two major broadcast delivery systems are television and radio, but it is there that the simplicity ends. Modern technology has advanced to the point where there are a myriad of instructional applications for radio and television. Included among the applications for broadcast television are: open circuit television, Instructional Television Fixed Services (ITFS), cable television, and slow-scan or compressed video; while the instructional applications for radio fall into two main categories: use of the primary carrier and use of the SCA or "subcarrier."

Open Circuit Television. According to the December, 1979 Videoplay Report, 98% or 76 million U. S. homes have one or more televisions, while 50% of all U. S. homes have two or more televisions.[6] With this number of home receivers available, an obvious medium which can be tapped is open circuit television. The "roots" of instructional television go back to the State University of Iowa and WGXK, an experimental TV station that broadcast a series of educational programs from 1932-1939. However, the first station exclusively devoted to education,

KIUT-TV in Houston, was not on the air until 1953. It was on the occasion of the establishment of this "first" in educational television that Frieda Hancock, then head of the Federal Communications Commission said,

> [There is] no question as to the tremendous potential inherent in large-scale use of television by educators. TV, as the "electronic blackboard," is a teaching tool of rare power and persuasion. Combining sight and sound, blessed with an immediacy of transmission and impact, welcomed by and available to almost everyone, television . . . is uniquely capable of serving all of our people in schools, homes and factories on a constant and intimate basis.[7]

Today, the "power" and "persuasion" of instructional television is becoming increasingly prevalent across the nation and in countries around the world, with institutions like Coastline Community College, Dallas County Community College District, Miami-Dade Community College, University of Mid-America, City Colleges of Chicago and Rio Salado Community College listing telecourses as a major part of their course offerings.

Open circuit instructional television courses are probably the most understood, yet misunderstood of the alternative delivery systems. The "understanding" comes from the familiarity which we all have with "educational TV." The "misunderstanding" arises from the belief that telecourses are simply "courses on television" rather than integrated learning systems which utilize video and print components, enabling students to "interact with faculty and other 'experts' and experiences in a setting as convenient as the nearest television set."[8] As Tom Gripp, Director of Telecourse Design at Coastline Community College states,

> [A telecourse] is not a correspondence course with pictures; nor is it a televised lecture with supplementary readings. It is an examination and

> presentation of a body of knowledge and information through the use of sight, sound, color, movement and print in a manner designed to stimulate, motivate, clarify and quantify a carefully designed and validated series of learning objectives.[9]

Telecourses as "integrated learning systems" have definitely improved since the early days of "Sunrise Semester." There are still, however, several concerns which telecourse users must face.

The first concern is the increasing cost of telecourse production and lease fees. It is becoming more and more difficult for any one institution to produce a telecourse on its own. In addition, many institutions have difficulty justifying $2000 to $3000 lease fees for a single semester's use of a telecourse. Broadcast air time is also an expensive commodity. For these reasons, many institutions are turning to cooperative efforts or consortia to cut production and broadcast costs.

The second concern faced by telecourse users is the amount of time required to properly design and produce a telecourse. The major producers of telecourses tell us that a top-rate telecourse cannot be produced in much under 18 months to two years, with some taking even longer. This means that once a community need is identified, it can take as much as two years to service that need if an already-produced telecourse is not available.

A third concern revolves around the student support services which must accompany telecourse instruction. How can we better serve our students? How can we insure that our telecourses remain learner-centered rather than institution-centered?

A fourth, and perhaps the most important concern, is how can we better design telecourses so that they are suited to the learning styles of mature, motivated students.[10] Is the "talking face" really outmoded? Do dramatizations always clarify the subject matter? Need the content lend itself to the "traditional" fifteen or sixteen week semester? The way in which we address these concerns will determine how effective open circuit telecourses are as an alternative delivery system.

Instructional Television Fixed Services (ITFS). ITFS is a special type of broadcast television designed specifically for the delivery of instructional materials. Established by the FCC in 1963, ITFS is a "point-to-point" system for transmitting as many as four channels to predetermined reception points such as hospitals, libraries, schools or industrial facilities.

The most attractive features of ITFS for educators are: (1) its multi-channel delivery system which allows several programs to be transmitted simultaneously; and (2) its interactive capability.[11]

The primary source of programming for ITFS studios is copied material, especially videotapes; but ITFS can also be used for transmission of voice and even data with the upper 4MHz of the frequency spectrum capable of "reverse" transmission either by voice or digital forms. This programming is broadcast over the air via microwaves and received by special antennas which are usually mounted on towers high enough to be within line-of-sight of the transmitter.

Two notable users of ITFS are the Senior University of the Bay Area in California and the USC Interactive Instructional Program. The former

is actually a consortium of institutions which use an existing ITFS owned by the Archdiocese of San Francisco to deliver specially designed courses to older adults, mostly over 60 and retired, in group viewing sites. Most of the programs used in the Senior University are adapted from existing telecourse material.

On the other hand, the USC Interactive Instructional Program broadcasts live courses originating on campus to industrial facilities in the Los Angeles area. Students in the remote classes--usually located in company conference rooms--interact with the instructor and students on campus via ITFS or by teleconferencing. There is also a daily courier service that delivers class materials and homework.[12]

ITFS, like open circuit telecourse instruction, is not for everyone, however. Educators who are considering making application for an ITFS license should be aware of several things. First, ITFS is a low-cost transmission system when compared to open circuit broadcasting. However, the installation and operation of ITFS equipment is still a sizeable capital outlay and requires a long-range commitment.

Secondly, the maximum distance reached by ITFS signals is usually 25 miles. This distance is obviously less where there is line-of-sight interference. Where interference does occur or where the desired reception point is farther than 25 miles from the transmitter, repeaters or translators must be used.

Third, the technology is here, but is not actually in a place that would allow the use of ITFS in private homes. Therefore, ITFS can be of maximum benefit to those institutions who have either branch campuses or who are in close proximity to industrial or special interest communities.

Cable Television. Cable television was originally developed to bring television signals to remote areas that were unable to receive satisfactory "off-the-air" signals. Today there are close to 4000 operating cable systems in the United States, serving approximately 9000 communities and 40 million people.

In contrast to open circuit and ITFS, cable television is transmitted through wire cable and, more recently, optical fiber, giving cable two distinct advantages over other forms of broadcast television. First, the use of cable greatly improves the quality of the picture. Second, the use of amplifiers allows for a substantial increase in the number of channels which can be received in any one geographical area, including channels devoted entirely to voice and digital information.[13]

One of the best examples of the way in which cable television can be utilized for instructional purposes is the QUBE project in Columbus, Ohio. Cable subscribers in the Columbus area may purchase a "little black box" which enables them to not only select from a number of channels, but also to express their own points of view and to respond to questions.

QUBE campus offerings are "narrowcast"--that is, provided only to the homes of those who have enrolled. When information appears on the screen, the student viewers can answer either yes/no or multiple choice questions. The QUBE computer then tallies the responses instantly and indicates the number of students who answered the question correctly. In addition, each home console has a "message light" which glows if the user has chosen correctly. Thus, each student has immediate feedback and the instructor can monitor each distant learner's progress on a daily basis.[14]

Slow Scan or Compressed Video. "Compressed video" refers to frequency or bandwidth compression and, practically speaking, involves the one-way transmission of still pictures with two-way audio--a type of "electronic slide projector." To accomplish this feat, a standard television signal is electronically compressed to the size of an audio bandwidth. This process causes the picture to be stretched in time so that the regular 30-picture-per-second rate of conventional television becomes a one-picture-per-10 seconds rate for slow scan.

Once the picture is compressed, it can be broadcast over cable, via an FM subcarrier, or it can be transmitted over regular phone lines. At the reception point, the signal enters a video expander which restores the video to its original bandwidth and reconstructs the image on a standard television monitor.

Because of the very nature of slow scan or compressed video, it is relatively inexpensive to produce and to transmit. It allows institutions in largely rural or uninhabited areas to reach remote community centers with interactive capabilities for remote students.

Radio - Primary Carrier. The use of radio for educational purposes began in 1919 when WHA went on the air from the University of Wisconsin; and by 1925 there were over 170 educational radio broadcasting stations.[15] Today, radio offers us most of the advantages of television at far less cost.

At Rio Salado Community College we own our own 100,000 watt FM stereo station and this enables us to utilize radio in a number of ways. First, we offer radio courses which are complete integrated learning

systems. At this time, we have three such courses in the development or design stage. In addition to courses, we do a great deal of "wrap-around" programming for our telecourses. These "wrap-arounds" include such things as short "feature" programs on topics similar to our telecourse topics; call-in talk shows with instructors and/or guest speakers; and the use of radio programs to augment telecourse content.

One example of how radio programming can be used to supplement telecourses is in the humanities telecourse. As a requirement for successful completion of the course, students must write at least two critiques during the semester. For the benefit of homebound students, handicapped students and our "incarcerated clientele," a series of original radio dramas called "Earplay"; "Masterpiece Radio Theatre," the radio counterpart to the PBS series; and several musical programs, including everything from classical music to jazz is offered. Students who cannot attend outside events, therefore, have an opportunity to complete all of the course requirements in their homes.

Radio - SCA (Subcarrier). Many colleges and universities around the country are beginning to utilize subcarrier channels in addition to open broadcast radio, but many educators are not aware of the way in which the SCA works.

The FCC authorizes an FM radio station to use a portion of the FM bandwidth to broadcast program material to target audiences. These subchannels can be used alongside the main channel without audio disturbance, but can only be received by specially tuned receivers.

At Rio Salado we are currently using one of our subcarrier channels for a program called Sun Sounds which is a radio reading service for the print handicapped. Through grant monies and private donations, special receivers are placed in the homes of people who are either blind or who have some other handicap which prevents them from reading the printed page. Through Sun Sounds, these people can "read" their newspapers, novels, shopping ads and other materials eight hours a day, seven days a week.

Other colleges and universities such as West Virginia Wesleyan College and Albany Medical College utilize their SCA capabilities for college credit audio instruction for undergraduates, graduate students and professional continuing education.

COPY DELIVERY SYSTEMS

Copy delivery systems are those that deliver programs in the form of tapes, discs or cassettes through a physical distribution system rather than being transmitted electronically.[16] Copy delivery systems include: (1) Videocassette, (2) Videodisc, and (3) Audiocassette.

The advantages associated with copy delivery systems are obvious. First, reliance on an outside source for delivery of instructional material is removed and students can truely "take" a course when it is most convenient for them. Second, copy delivery systems lend themselves very well to self-paced, individualized instruction and to open-entry/open-exit programs. The disadvantages, however, are equally as obvious. Most copy delivery systems still require the student to leave his/her

home and travel to some location for playing the particular tapes or cassettes. Copy delivery systems are also not without costs and it is increasingly difficult to maintain a large enough library of tapes and cassettes to accomodate students.

Videocassette. The videocassette has been used for a number of years as a copy delivery system. Through library learning resource centers, students have been able to view telecourses in videocassette format, often taking them in a self-paced mode. In addition, many institutions use videocassettes in a closed-circuit mode. Recently, however, a new form of videocassette has been developed. Using a random access system called an ABC 2000, interactive videocassettes offer students the option of responding to either yes/no or multiple choice questions that are integrated into the videotaped programs at several points.[17]

When the student presses a response key on a small remote control device, the response key initiates branching and the cassette will automatically shuttle to a remedial segment if the answer is wrong or forward to the next segment if the answer is correct. The remote control allows the student several alternatives not usually available with videocassettes, including: (1) pause for response, (2) search forward and reverse, and (3) display of instructions to the student on an illuminated readout. It is interesting to note that when the student's responses indicate a failure to grasp the content material, the readout will say "Call Instructor" and this particular phrase activates a program command that locks all of the buttons on the control panel.[18]

Videodisc. Videodiscs are thin, plastic discs similar in appearance to audio records. Although all videodiscs are played in essentially the same manner, there are two major types of videodisc systems: (1) the optical system, which uses a laser or light beam to read information off the disc; and (2) the contact system, which uses the more traditional "needle-in-the-groove" technique.[19]

The optical videodisc can offer more to us as educators because it bears some very distinct advantages. First, it is designed to present pictures in both still and motion modes--including slow motion with no distortion of the picture. Second, the optical videodisc has two parallel sound tracks that can be used to record commentary on two different academic levels, or in two different languages, or one track can be used to record questions and the other can be used to record answers. Third, the optical videodisc has the capability of fast forward and fast reverse and can stop precisely on a single frame. In addition, it can also be forwarded on a frame-by-frame basis. Fourth, the quality of the picture on a videodisc is actually superior to the picture of a videocassette. And fifth, the optical videodisc lends itself beautifully to hookups with dataprocessors like the PLATO system.[20]

These advantages are obviously offset by two major disadvantages--cost and availability of software programming. Optical videodisc equipment is currently available in an industrial or heavy-duty format, as well as in a consumer format. It will be some time, however, before a large enough amount of educational programming is available to warrant the purchase of this equipment.

Audiocassettes. Just as television instruction has overshadowed radio instruction, so has our fascination with videocassettes and videodiscs kept us from making maximum use of the audiocassette. Nearly every home in this country has at least one audiocassette recorder and more and more people are installing audiocassette recorders in their automobiles.

Why, then, shouldn't we take advantage of this prevalence of equipment by making whole courses available to students through audiocassettes? An entire "Commuter College" could be established and students could listen to their lessons on the way to and from work, completing assignments in the evenings or on weekends. Audiocassettes are inexpensive to buy and duplication is made easy with the use of high-speed duplicators that can make a copy of a 60 minute cassette in roughly two and a half minutes.

PRINT DELIVERY SYSTEMS

The two major forms of print delivery systems available to us are correspondence courses and courses by newspaper. Both offer students the ability to complete coursework in their homes as they would telecourses or radio courses.

Correspondence Courses. Correspondence courses are sadly underused by community colleges. I say sadly because correspondence courses truely give the student a chance to master content material at his/her own pace. At Vista College in California, correspondence courses have

become a very popular part of the alternative delivery offerings. Students of correspondence courses at Vista attend orientation sessions; have reading assignments; answer questions in a syllabus, which are graded by the instructor; and take monitored midterm and final exams.

Courses by Newspaper. CbN or Courses by Newspaper on the other hand are becoming more and more popular. The CbN produced by the University of California at San Diego are highly sophisticated integrated learning systems which include texts and study guides as well as the newspaper articles.

COMPUTER DELIVERY SYSTEMS

When you mention the word "computer" most people have visions of a large complicated piece of equipment which can be understood only by a select group of "chosen ones." The computer, however, can be used in a number of simple, yet effective ways for instruction including CAI (Computer Assisted Instruction) and CMI (Computer Managed Instruction).

Computer Assisted Instruction (CAI). There are a number of different CAI programs which use a computer either as a supplementary tool to traditional classroom instruction or as a total alternative to the classroom. The two best known forms of CAI are TICCIT and PLATO.

TICCIT is an acronym for Time-Shared, Interactive, Computer-Controlled Information Television. Developed by the MITRE Corporation, TICCIT is a totally individualized computer-based system using a 12" Sony color television and a special keyboard. In TICCIT, the student

spends virtually all of his/her "in-class" time working with the computer, interfacing via the keyboard and receiving feedback and instruction via the audiovisual display unit.[21] The instructor becomes an educational manager, working one-on-one with students as they need assistance.

Programmed Logic for Automated Teaching Operations or PLATO, on the other hand, uses the computer in a supplementary-type role. That is, the student may spend one or two days a week interfacing with the computer and one or two days a week in a traditional classroom. In this instance, the instructor remains the major content purveyor adapting the computer materials to fit his/her own particular needs.

As you can imagine, CAI offers instructors an opportunity to deal directly with each student on a one-to-one basis and, when combined with other alternative delivery systems can greatly enhance educational offerings. For example, one of the sister colleges of Rio Salado Community College, Phoenix College, has a TICCIT program. We recently met with the TICCIT people there to brainstorm the many different ways we could utilize TICCIT in conjunction with other alternative delivery courses. Two of the ideas which we hope to implement soon are: (1) using a developmental English TICCIT course as a fall-back for students having difficulty with "Writing for a Reason," a first-semester English composition course produced by Dallas County Community College District; and (2) putting several of our telecourses on TICCIT for self-paced instruction.

Unfortunately, the advantages of CAI are offset by the costs of equipment and courseware. These costs will not decrease until more

institutions become involved with CAI or until there are consumer markets for CAI courseware.

Computer Managed Instruction (CMI). Two types of Computer Managed Instruction are RSVP and ORACLE. RSVP is an acronym for Response System with Variable Prescriptions and is a CMI developed by Miami-Dade Community College. RSVP is a unique form of CMI because it not only tells the student what answers to exams or quizzes are correct and which are incorrect, but it also is capable of giving the student analysis of answers on a number of different academic levels. In addition, RSVP can also be used in student advisement and counseling.

ORACLE is the Computer Managed Instructional system used by Coastline Community College. It works in essentially the same manner as RSVP; that is, the students take tests on mark-sense cards which are fed into computers, generating individualized letters to students. ORACLE, however, does not have the capability of giving the student variable prescriptions.

TELEPHONE DELIVERY SYSTEMS.

For years we've been told to "let our fingers do the walking"; but I don't think any of us ever really envisioned this symbolic "hike" as a means of reaching the classroom. It's being proven every day, however, that the telephone is a viable medium for delivering instruction. Four different ways in which the telephone is being used as an alternative delivery system are: (1) Teleconferencing, (2) Telelecture, (3) Telewriting, and (4) Dial Access.

Teleconferencing. Telephone lines criss-cross this country in an intricate network that connects every small town and major city. What better way, then, to "connect" remote students to the campuses? That is exactly what can be done through teleconferencing. With a minimum amount of capital outlay, a huge party line can be established which will allow distant learners to interact with each other and with an instructor many miles away.

This is the philosophy behind the use of teleconferencing both at Britain's Open University and at the University of Wisconsin's Educational Telephone Network (ETN). At the Open University, two types of teleconferencing are utilized. There is a "conference bridge" which enables eight students and a tutor to converse in open discussion each using his/her home phone; and there is a "loud speaking telephone" that enables groups of students at two different study centers to talk to each other or to a tutor.[22]

According to a 1978 article, the University of Wisconsin's Educational Telephone Network covers 72 counties, linking 200 separate classrooms with more than 150 courses offered on an annual basis. These courses fall into four basic categories: continuing education, administrative programs, public service and credit courses. There is a Local Program Administrator at each location and there are well-developed print materials to accompany each course.[23]

Telelecture. Telelecture can best be described as a prearranged telephone call from the classroom to a resource person, providing students the opportunity to ask questions and to make comments.[24] This

telephone delivery system is extremely inexpensive and is accessible to anyone with regular phone lines and a small speaker-phone.

Telewriting. The transmission of drawings and graphic material from one location to another is referred to as telewriting.[25] One such writing system is the Gemini 100 Electronic Blackboard. Developed by Bell Laboratories, the Gemini 100 Electronic Blackboard is a specially designed blackboard with a pressure-sensitive surface which electronically converts normal chalk strokes into signals that are transmitted over the telephone lines. At the receiving end, the signals are reconverted on a standard TV monitor. The voice portion of a supporting lecture is carried over a second phone line via a Portable Conference Telephone that offers hand-free operation, has a built-in loud speaker and permits discussion between students and the instructor. Material transmitted via the Electronic Blackboard can be used "live" or it can be recorded and played at a later time for the student's convenience.

Dial Access. Perhaps the simplest method for utilizing the telephone for instructional purposes can be found in a small system of automatic tape decks linked to telephone lines by means of recorder-couplets supplied by the phone company. This system is called "dial access". When a student needs to hear a lecture, lesson reviews or audio aids like dictation for a shorthand class, he/she simply calls a specific phone number, tells the operator what tape to play and listens away using his/her own phone.

A system like this is currently being used at Coastline Community College where telecourse students can call-up short review tapes; and in Prince William County, Virginia where students in the Adult Basic Education/GED program can hear entire lessons via the telephone. The system in Virginia even allows students with Touch-tone phones to stop the tape, backspace and restart the lecture at any time.

SATELLITE DELIVERY SYSTEMS

The use of communications satellites impacts on other alternative delivery systems in two ways. First, satellites extend the distribution and delivery of services to persons and places not otherwise served or inadequately served. Second, satellites increase the quality and number of services and programs for areas already served and at afforadable costs.

When combined with other delivery systems such as open circuit television and radio, ITFS, and cable, satellites enable instructional programming to become available to persons in rural or remote areas. Consortia such as the Appalachian Community Service Network are beginning to utilize such delivery systems by transmitting telecourses nationwide via satellites.

In the span of twenty pages I have presented eighteen different alternative delivery systems and I am sure there are many more. So why is it--why is it that we aren't all using these systems? Well, there

are probably as many different answers to that question as there are institutions, but I think we have a few reasons in common.

The first reason, obviously, is cost. The "Proposition 13 Syndrome" is spreading rapidly and in areas where taxpayers haven't begun to revolt, school boards are trying to show good faith by "cutting the fat," so to speak. We're all being asked to generate more Full-Time Student Equivalents or ADA's using less and less money. How can we afford to branch out and invest in capital equipment for alternative delivery systems?

The second reason is opposition to change on our campuses. Let's face it. There are an awful lot of people in education who like things the way they are and don't want to upset the apple cart by trying anything new. I'm talking about faculty, deans, registration office managers, librarians and so on--lots of different types of people. Faculty members are often very leery to give up their "traditional" role of content purveyor and take on the role of educational facilitator by working with telecourses or CAI programs like TICCIT and PLATO. Deans of Instruction are too often over worked and don't feel that they have the time or the staff to start still another project. Most registration office managers like all classes to start on a certain date and end on a certain date. They, too, feel that they lack the staff necessary to initiate programs like mail-in registration and phone-in registration, and all too many librarians feel that libraries mean books, not audio or videocassettes as well.

A third reason for our hesitance or perceived inability to adopt one or more of these alternative delivery systems is a lack of under-

standing on the part of our county and state board members and our state legislators as to what the "new student" needs and wants. Not every student is concerned about university parallel or transfer courses; yet in many areas, there is no state reimbursal for non-university parallel courses. Not every student can or wants to start class on August 27th, completing the course on December 14th. This pace is too slow for some, too fast for others and just plain inconvenient for a lot of people whose lives are not geared to academic quarters or semesters. Yet in many areas state reimbursal is based on the number of students attending classes on a given date.

And not every student is a full-time student. In Arizona it takes five students each enrolled in one three-credit hour class to equal one full-time student equivalent (FTSE) and there are an increasing number of students who are only enrolled in one or two courses a semester. This means that we are getting money for one full-time student when we are actually servicing five people and that means five registrations, five parking stickers, five counseling sessions, five purchases at the bookstore, etc. It means more on less, which is where we started.

Given these constraints or barriers, how can we afford to implement alternative delivery systems? The answer is that we can't afford not to! As Patricia Cross recently told the Arizona State Community College Board,

> The cutting edge of adult education is on more individualization of program and more self-direction in learning activities. Although adults are fairly conservative when it comes to preferences for the delivery of education, most studies report that the majority of potential learners prefer approaches other than on-campus lectures.[26]

We need to reach these people and alternative delivery systems can help us; but we also need to use them wisely. In an article written for Planning for Higher Education, Barry Schwenkmeyer gives several "Rules of Thumb" for using instructional technology.[27] He says:

1) "Focus on the learning process." How do people learn and what do they need to help them?

2) "Place faculty at the center of instructional innovation." Once they're involved, faculty often become the biggest advocates of alternative delivery courses.

3) "Put the emphasis on people." Not institutions or policy or regulations or tradition.

4) "Hang loose with the equipment." Don't over invest until you are sure that your approach is the right one for you.

5) "Be prepared to shift gears." Not every system will work for everyone. What works in metropolitan areas probably won't work in rural areas of the state without adaptation.

6) "Whenever possible, cooperate with others." Consortia are springing up all over the country as different institutions and agencies realize that by working together, they can accomplish what they couldn't do alone.

In Arizona, we have formed the Consortium for Lifelong Learning in Arizona through Instructional Media. C.L.A.I.M. members include community colleges, four-year universities, health-care facilities and agencies, libraries, law enforcement units and even one rural electric cooperative. For the last year five community colleges and two four-year universities have shared in the lease costs of seven different

telecourses; enabling some of our smaller rural colleges to use courses like "Project: Universe" and "Humanities Through the Arts" for as little as $100 for the semester.

7) "Start small and don't be afraid to make mistakes--but start." That's the most important thing. We have to START. If we don't; if we continue to close our eyes to changing needs and changing methods, the predicted decline in students won't simply be a prediction any more.

If we fail to do the job which we are supposed to do; that is, educate adults and adequately prepare them for the job market, then industry and other outside agencies will do it for us. And do you know how they'll do it?

* Goodyear Tire & Rubber in Akron, Ohio has 495 players in two video departments and a large "Goodyear Video Network" with 455 ½" Betamax players in dealerships all over the country.

* Clark Equipment Company in Battle Creek, Michigan has 183 domestic locations and 100 overseas locations in its video network with programs devoted completely to dealer training needs. These programs are available in Spanish, French and German as well as English.

* Illinois Bell Telephone Co. has a video network of 150 locations reached by long lines and microwave with 250 3/4" video recorders and a "mobile video theatre." Illinois Bell produces 100 programs a year for training purposes.[28]

And the list goes on . . . . .

The question of "how" education is to be delivered has already been answered. The only question left is "by whom?"

END NOTES

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[3]K. Patricia Cross, "Community College Students Today and Tomorrow." Paper presented to the Arizona State Community College Board, Phoenix, Arizona, 1979, p. 2.

[4]Ibid., p. 7

[5]Paul Elsner, "Community Colleges Without Walls - A New Delivery for Community-Based Education," Interface, p. 2.

[6]Videoplay Report, December 24, 1979.

[7]Stuart A. Shorenstein, "Pulling the Plug on Instructional TV," Change Magazine, (December-January 1978/79), p. 62.

[8]Stephen K. Mittelstett, "Telecourse Design, Development and Evaluation," in Using Mass Media for Learning, ed. Roger Yarrington (Washington, D.C.: American Association of Community and Junior Colleges), 1979, p. 53.

[9]Tom Gripp, "What is a Telecourse?" Address to a conference on instructional television, Arlington, Texas, 1978

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[11]Herbert S. Dordick, Helen G. Bardley, and Glen Fleck, ITV: A User's Guide to the Technology, (Washington, D. C.: Corporation for Public Broadcasting), 1979, p. 38.

[12]"Shorenstein, p. 62."

[13]Dordick, et al, p. 54-56.

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[14]"QUBE - Interaction on the Cable," Educational and Industrial Television, 11 (April 1979), p. 45-51.

[15]Terrence D. Adams, "Working with Broadcasters," in Using Mass Media for Learning, ed. Roger Yarrington (Washington, D. C.: American Association of Community Junior Colleges), 1979, p. 15-16.

[16]Dordick, et al, p. 63.

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[21]Nick Lambesis, "Some Computer - Assisted Approaches to TESL," Journal of Educational Data Processing.

[22]Sandy Hammond, "Tele-education at the Open University," Journal of Communication 28 (Summer 1978), p. 142.

[23]Lorne A. Parker and Marcia A. Baird, "Teaching By Telephone," Journal of Communication 28 (Summer 1978), p. 137-139.

[24]Lorne A. Parker, Marcia A. Baird, and Dennis A. Gilbertson, "Introduction to Teleconferencing," p. 2.

[25]Ibid.

[26]Cross, p. 7.

[27]Barry Schwenkmeyer, "College Flourishes on Instructional Tech-Savvy Management, The Key," Planning for Higher Education 5 (August 1976), P. 6.

[28]"From A to Z, they use TV," VU Marketplace 2 (May 28, 1979), p. 5 and 7.

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